Eagle Point Solution to a Frequently Asked Question

How to Place an Earthen Storage Pond

Summary:
This document explains the process of placing a rectangular earthen storage pond and calculating and balancing earthwork volumes.

Product: Eagle Point Software™ 2001
Release: 2001 Q4 or 1.4.0 and greater
Platform: All
Related documents:

As always, should you have any questions regarding any phase of installation, contact Eagle Point Technical Assistance at (800) 477-0909.

Notation Method

Button to Press| *Displayed Text* **Icon** Action {Text to Enter} *Menu Item…*

Placing an Earthen Storage Pond Template

1. From AutoCAD, click *NRCS/EP… NRCS Storage Pond…Place Storage Pond into CAD….*
2. Input the dimensions, slopes and top of fill elevation.
3. Click Place into CAD.
4. Select the point in CAD for the lower left corner of the inside top of fill.
5. To move the template and maintain the same elevation:
   a) Turn *Osnaps off*, select any line of the pond, and click the **Move icon**.
   b) Click any location as a reference point for moving the storage pond.
   c) Click the new location of the corner.
6. To move the template and change the elevation:
   a) Select any line of the pond and click the **Move icon**.
   b) Snap to an outer gray corner of the storage pond.
   c) Snap to a contour line at the new location of the corner **OR**
   d) Shift/Right click. Click *Point Filters… XY….* Select the new location of the corner. Input the new elevation of the snapped point {1105.5}. Press Enter.
7. To rotate the pond:
   a) Select the pond. Click the **Rotate icon**.
   b) Snap to the pivot point.
   c) Click to place the new rotation angle.

Note: If a second storage pond graphic is going to be placed into CAD the selection group must be renamed.

8. From AutoCAD, click *NRCS/EP… NRCS Storage Pond…Manage Object Groupings….*
9. Highlight *StorPond*.
10. Input a new Group Name. E.g. {Pond1}.

11. Click Rename.
12. Click OK.

Preparing Surface Model Settings for the Embankment

1. From AutoCAD, click *NRCS/EP… Create Contours… Manage Surface Model….*
2. Click the **New Surface Model Icon**. This brings up New Surface Model box.
3. Click on the **Library icon** (looks like books on a shelf) and select the *Embankment* surface model. Click Load Prototype. Click Yes. Click Close.
4. Input a Description name. E.g. {EmbkInside}, which would represent embankment template.
5. Once you have settings done click OK.
6. Click the **Copy Surface Model Icon**.
7. Pull down the embankment template model. E.g. *EmbkInside.*
8. Input a surface model description name. E.g. {EmbkBal}, which would represent embankment that has been moved up or down to get balanced quantities.
9. Click OK. Click Close.
10. Click Close to close out Manage Surface Models

Creating a Surface Model for the Embankment Template

1. From AutoCAD, click *NRCS/EP… Create Contours… Triangulate Surface Model….*
2. Pull down the name. E.g. *EmbkInside.*
3. Pull down to set boundary line to *Select.*
4. Place a checkmark by *Display Model* if you want to see a temporary set of triangulation. Place a checkmark by *Place Triangles* if you want to have triangulation objects placed into the drawing.
5. Click Apply.
6. Use AutoCAD selection methods to pick the pond lines. Press Enter.
7. Select the outer line of the pond.
8. Click Close on the Triangulate Surface Model.

Verifying the Embankment Template Surface Model

1. From AutoCAD, click *NRCS/EP… Create Contours… Make Intermediate & Index….*
2. Verify the surface model name *EmbkInside.*
3. Usually no checkmarks are place in any of the boxes.
4. Click Apply. Contours will appear in CAD.
5. Click Close.
6. Review the contours to determine whether the surface model is correct.
7. From AutoCAD, click *NRCS/EP… Create Contours…Track Coordinates….*
8. Verify the surface model name *Embk.*
9. Click Apply .
10. Move cursor around in CAD and elevations will be displayed.
11. Click Close.
12. From AutoCAD, click *NRCS/EP… Create Contours… Erase Existing Objects….*
13. Checkmark *Contours* and any other items that have been placed into CAD. Click Apply. Click Close.

Balancing the Embankment Volumes

1. From AutoCAD, click *NRCS/EP… Volumes… Balance….*
2. Pull down original surface model as Original Ground. E.g. *Ognd.*
3. Pull down Final surface model as Embankment template. E.g. *EmbkInside.*
4. Pull down Balanced surface model as Balanced Embankment. E.g. EmbkBal.
5. Input any upward or downward displacement limits.
6. Pull down material as *Balanced.*
7. Input upper and lower limits E.g. {20} and {20}.
8. Click Settings….
9. Input slopes H/V: E.g. Cut = {3.0}, Fill = {-3.0}.

10. Checkmark *Keep When complete.*
11. Checkmark *Use Compaction Factor.*
12. Input shrinkage for cut. E.g. Cut = {-25}.
13. Checkmark *Calculate Prismoidal for Balanced.*
14. Click OK. Click Apply.
15. Click **Print Icon** to get printed results.
16. Click Close.
17. To move the Pond CAD lines to the final elevation select any inner pond line. Click **Move**.
18. Click any point. Click a second location to displace it.
19. Select the pond. Click **Move**.
20. Snap to a corner on the outer line. Snap to the corresponding corner of the slope projection lines.
21. Select the pond and verify elevation of grips.

Submitted by Norman Friedrich.